

G-Stomper Studio G-Stomper Rhythm G-Stomper VA-Beast

User Manual

App Version: 4.5
Date: 31/10/2015
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8 VA-Beast Synthesizer

G-Stomper VA-Beast is a polyphonic virtual analog Synthesizer to produce complex synthetic sounds of any variety, designed for experienced sound designers as well as for complete beginners.

The idea behind the VA-Beast Synthesizer is to offer a flexible sound engine that features classic subtractive waveforms as well as very powerful FM synthesis.

Each Oscillator offers 6 different shapable waveforms. These waveforms can also be synched using the additional sync Oscillator of each Oscillator unit. Having an extra sync Oscillator means you don't need to sacrifice one of the regular Oscillators just to sync another one. You always have at least two Oscillators per voice even when using Oscillator sync.

Each Oscillator provides an internal FM mode when using the Dual Sine Waveforms. In this mode each Oscillator forms a 2-operator FM engine, which means you get a total of 4 operators per voice. In addition, the Oscillator modulation section offers a number of powerful modulation types, including OSC FM, Filter FM, Filter Resonance Modulation and Distortion RM.

Furthermore you're always able route the Oscillator signals through two high quality Filter sections for further processing.

8.1 Overview

G-Stomper Studio provides up to 12 Synthesizer Tracks, where each is powered by its own VA-Beast Synthesizer instance.

The VA-Beast Synthesizer has 12 main sections (per track) to tweak/modulate the sound in real-time.

- Quick Preset Selector and Info Display
- OSC1, OSC 2, OSC Mod (2 Oscillators + Oscillator Modulation)
- LFO (3 Low Frequency Oscillators)
- Mod Env (3 Modulation Envelopes)
- Filter 1 (Multi Filter with 8 Filter types + a dedicated Filter ADSR Envelope)
- Filter 2 (Multi Filter with 8 Filter types + a dedicated Filter ADSR Envelope)
- Amp Env / Output Level (dedicated ADSR Envelope for the amplification level)
- Vibrato
- Unison (multiplies and detunes the signal up to 5x, for a massive stereo-wide effect)
- Glide / Legato
- ChordMem (Chord Memory)
- Arpeggio

When you edit VA-Beast related parameters, then you always act on the currently selected VA-Beast Track (the highlighted one).

If you want to change the OSC1 Shape on VT01 for example, first select VT01 and then change the OSC1 Shape Parameter.

Note: Use the bar at the right side to scroll up/down through all the parameter sections.

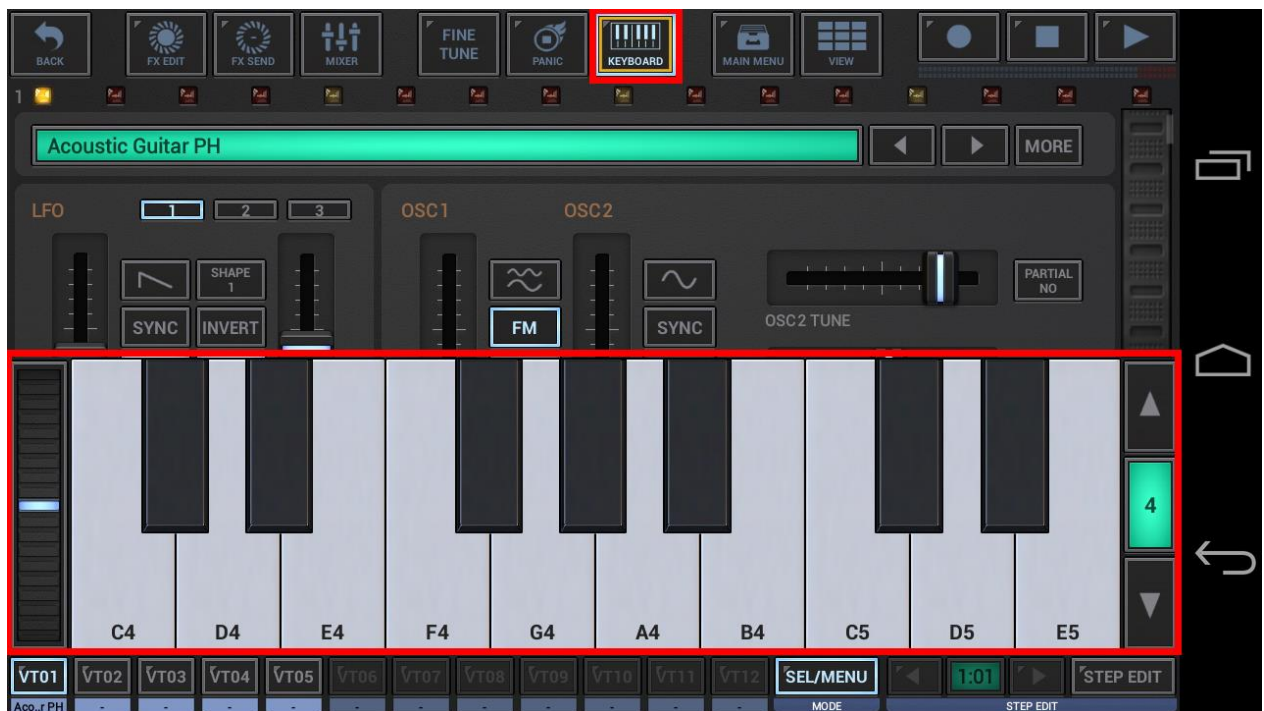


8.1.1 The On-Screen Keyboard

The VA-Beast offers an on-screen keyboard, which can be toggled on/off using the keyboard switch in the toolbar.



To increase the size of the on-screen keyboard, long press the keyboard button.

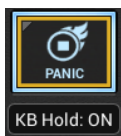


8.1.2 The Panic Button

If Notes hang for some reason, simply press the Panic button. This sends an internal All Notes Off, which immediately stops all hanging Notes from being played.

**Note:**

Instead of the Panic button you can also press Stop (when the Sequencer is not running) to stop all playing sounds. While the Panic button is dedicated to the VA-Beast Synthesizer, the Stop button stops all Sounds, from VA-Beast and the Sampler.

KB Hold:

By long pressing the Panic button you can enable the Piano Keyboard to hold all your pressed Keys until you press Panic (or Stop) again. This can be very useful to tweak a sound without having a Sequence running.

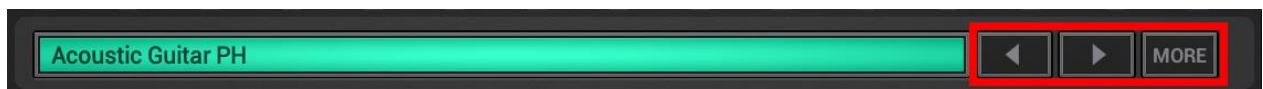
8.2 Panel Reference

8.2.1 Quick Preset Selector and Info Display



8.2.1.1 Quick Preset Selector

The Quick Preset Selector is very easy way to select VA-Beast Presets with a single click rather than going through the regular file browser.



'<' and '>': Select the previous or next Sample within a particular sample folder.

Note:

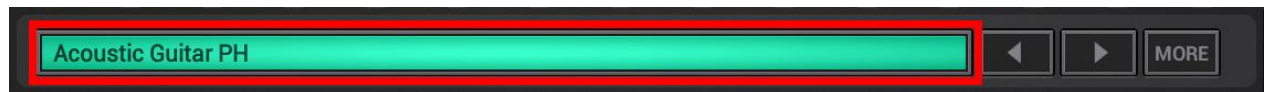
Since a VA-Beast Preset does not always refer to an actual Preset file, the Quick Preset Browser cannot adopt the folder of the current Sound. Therefore the Quick Preset Selector always keeps the currently selected Preset folder, even if you select another track. This means you can switch between the tracks and step up and down within the currently selected Preset folder, regardless what Preset was previously loaded (or set) at the tracks.

More (or short click to the display):

Shows up the "Load VA Preset" menu for the currently selected track, which lets you browse your presets using the regular file browser (loading a Preset with the regular file browser updates the current Quick Preset Selector folder location).

8.2.1.2 Preset Info Display

The Info Display shows the name of the actual Sound



Short click to the display:

Shows up the "Load VA Preset" menu for the currently selected track, which lets you browse your presets using the regular file browser (loading a Preset with the regular file browser updates the current Quick Preset Selector folder location).

Note:

The name which is shown on the display does not necessarily refer to a Preset file. VA-Beast Presets can be part of a Pattern Set, Pattern or Sound Set, in their original form or with completely changed or tweaked parameter settings. Therefore the reference to the original Preset file is not kept (other than with audio samples).

8.2.2 Oscillator 1 & 2



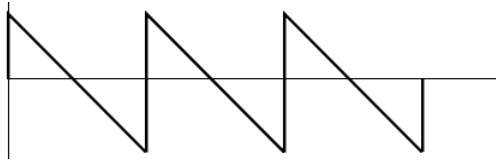
Each Oscillator offers 6 different shapable waveforms. The characteristics of each waveform will be explained in the following chapters.

To choose one of the waveforms, simply tap the waveform selector buttons.



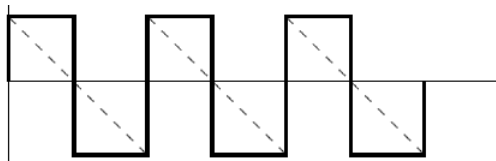
8.2.2.1 Sawtooth

The sawtooth wave contains all harmonics and is the richest of the available waveforms.



Shape:

Morphs the sawtooth to a pulse wave, as higher the Shape value as more the sawtooth gets a pulse wave.

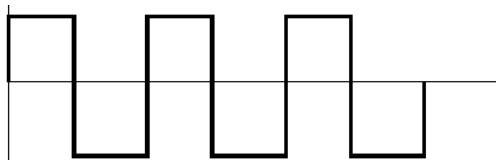


Sync:

In sync mode a hidden sync oscillator is activated and controls the main pitch of the signal. In sync mode the Shape fader controls the synced Oscillator's frequency. As you change the Shape value you get strong changes in timbre, the typical synced sound.

8.2.2.2 Pulse

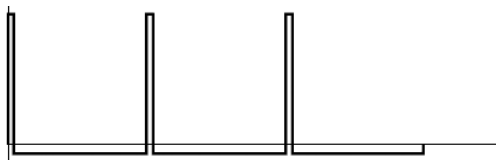
The pulse wave contains only odd harmonics at 50% pulse width (square wave).



Shape:

Controls the pulse width from 50% (square wave) to 1%.

Modulate the Shape value from an LFO to create synthesized strings.

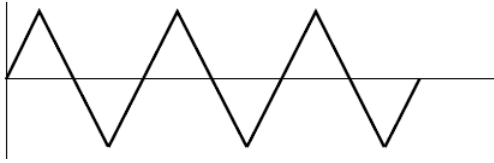


Sync:

In sync mode a hidden sync oscillator is activated and controls the main pitch of the signal. In sync mode the Shape fader controls the synced Oscillator's frequency. As you change the Shape value you get strong changes in timbre, the typical synced sound.

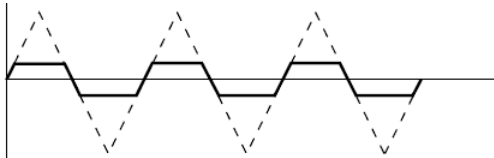
8.2.2.3 Triangle

The triangle waveform has only odd and not very strong harmonics.



Shape:

Cuts off the peaks of the triangle wave. As higher the Shape value, as more the peaks get cut off. Modulate the Shape from an LFO to get a nice sounding soft timbre change.

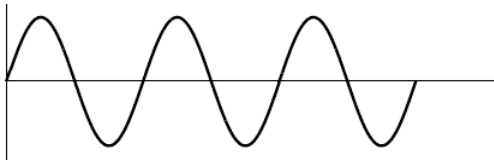


Sync:

In sync mode a hidden sync oscillator is activated and controls the main pitch of the signal. In sync mode the Shape fader controls the synched Oscillator's frequency. As you change the Shape value you get strong changes in timbre, the typical synched sound.

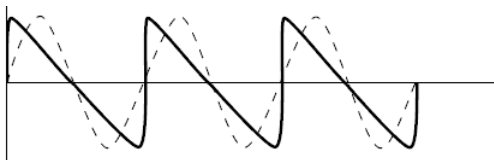
8.2.2.4 Sine

The sine wave is the simplest waveform there is. It has no additional harmonics. It is suitable for very soft sounds or for use with FM.



Shape:

Controls the amount of harmonics to be added to the sine wave in use of phase distortion. As higher the value as more harmonics will be added. Simply said, the sine wave gets morphed to a sawtooth approximation.



Sync:

In sync mode a hidden sync oscillator is activated and controls the main pitch of the signal. In sync mode the Shape fader controls the synched Oscillator's frequency. As you change the Shape value you get strong changes in timbre, the typical synched sound.

8.2.2.5 Noise (Oscillator 1)

Oscillator produces noise rather than a regular waveform.

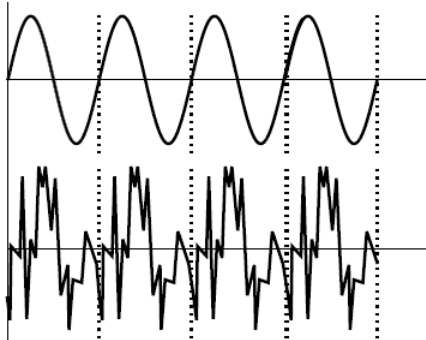


Shape:

Controls the color (frequency content) of the noise with a 12 dB Low Pass Filter. As higher the value, as brighter is the noise. At maximum you get (almost) white noise.

Sync:

In sync mode a particular range of the noise gets temporary sampled and repeated over and over. This produces very special signals with strong body resonance characteristics. In sync mode the shape fader works as a Waveform selector, which lets you choose from 16 different harmonic variations.

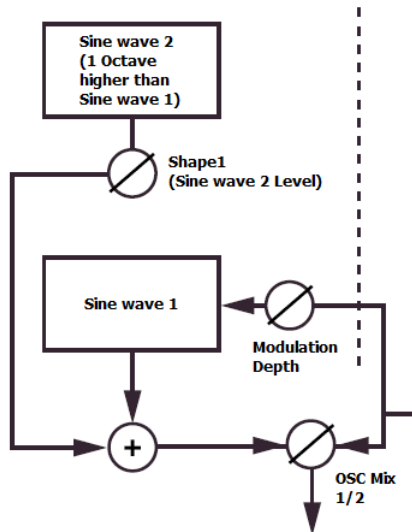


8.2.2.6 Dual Sine (Oscillator 1)

The Dual Sine waveform of Oscillator 1 is a combination of two Sine waves (Sine wave 1 & 2) while Sine wave 2 is pitched 1 octave higher than Sine wave 1.

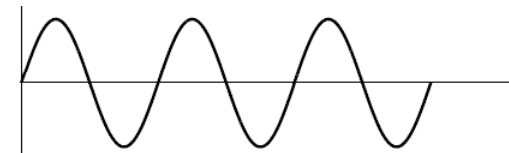
Dual Sine (normal mode):

In normal mode (non-FM) the two Sine waves are simply mixed to one signal while the Shape fader controls the level of Sine wave 2.

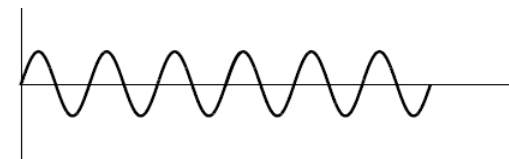


Shape in normal Dual Sine mode:

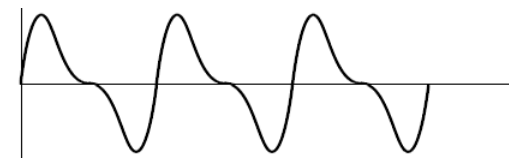
Controls the level of Sine wave 2 (the 1 Octave higher one).



Sine wave 1



Sine wave 2



Mixed output

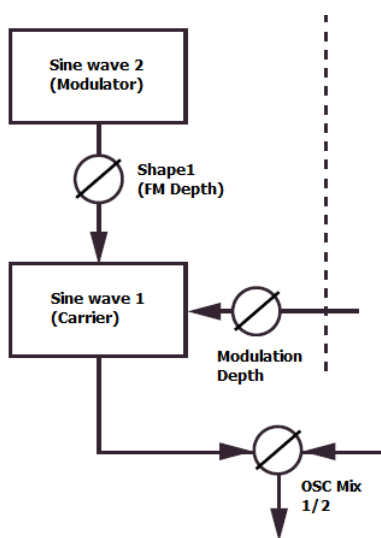
Dual Sine FM:

Instead of the Sync switch (which the other waveforms provide), the Dual Sine waveform provides an FM mode. With Dual Sine FM enabled you have a 2 operator FM engine (as a single Oscillator waveform) with Sine wave 1 as Carrier and Sine wave 2 as Modulator. Note that if FM is enabled, both Sine waves are at the same pitch (rather than in normal Dual Sine mode one Octave separated).

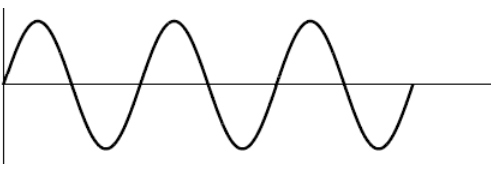


With FM enabled you can choose from 5 different FM algorithms:

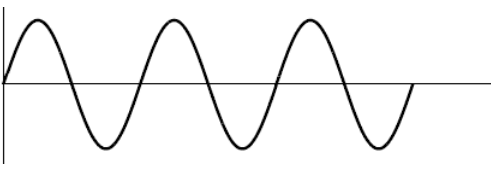
Phase Modulation (like in DX7)
 Logarithmic +
 Logarithmic +/-
 Linear +
 Linear +/-

**Shape in Dual Sine FM mode:**

Controls the FM depth/amount.



Sine wave 1



Sine wave 2



FM output

8.2.3 Oscillator 2



The main difference between Oscillator 2 compared to Oscillator 1 is the fact that it provides more control over the Tune (Pitch) of the particular Waveforms.



Simple Waveforms (Sawtooth, Pulse, Triangle, Sine) provide Tune and Finetune controls.



Noise provides detailed Filter controls. (see Chapter: Noise (Oscillator 2))



Dual Sine provides independent Tune control for each Sine wave. (see Chapter: Dual Sine (Oscillator 2))

Furthermore Oscillator 2 provides 3 different Tune modes.



Semi Tones (default):

The Tune faders are scaled to semi tones in a range from -63..+63.

Partial No:

The Tune faders are scaled to harmonic partials of the current Keyboard pitch in a range from -38.0..+38.0, which makes it very easy to find harmonic Pitches (e.g. for Dual Sine FM).

KB Off / Fixed:

This turns the Keyboard tracking off for Oscillator 2. In other words, in this mode Oscillator 2 runs on fixed (Keyboard independent) Pitch, which is controlled by the Tune fader in a range from 8.66Hz..12544Hz. This mode is very useful to create disharmonic FM or ring modulated sounds.

Note:

The Finetune fader has a fixed range of -50cents..+50cents and is not affected by the Tune mode.

8.2.3.1 Sawtooth, Pulse, Triangle, Sine

These Waveforms are exactly the same as on Oscillator 1.
(see Chapter: Oscillator 1 & 2)

8.2.3.2 Noise (Oscillator 2)

Oscillator produces noise rather than a regular waveform.
(see also Chapter: Oscillator 1 & 2 > Noise (Oscillator 1))

The Noise of Oscillator 2 is basically the same as on Oscillator 1, but it allows more control over the Noise Filter than on Oscillator 1.



OSC2 Noisefreq:

Controls the Cutoff frequency of the Noise Filter. As higher the value, as higher is the frequency.

OSC2 Noisefilter Type:

Controls the Filter Type of the Noise Filter (12dB Low Pass, Band Pass or High Pass).

Shape:

Controls the Resonance of the Noise Filter.

8.2.3.3 Dual Sine (Oscillator 2)

The Dual Sine waveform of Oscillator 1 is a combination of two Sine waves (Sine wave 1 & 2).

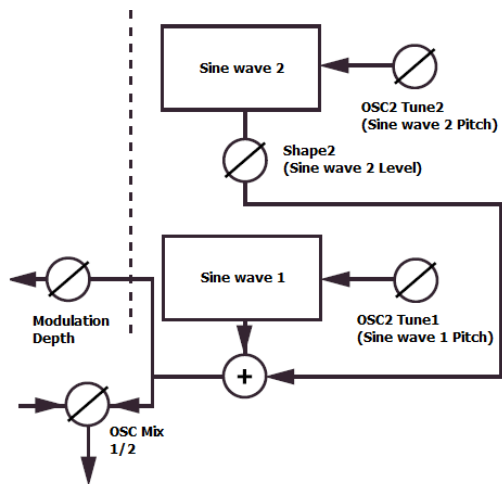
The Dual Sine of Oscillator 2 is basically the same as on Oscillator 1, but it allows more control than the one of Oscillator 1. On Oscillator 2 you can control the pitch of both Sine waves independently.



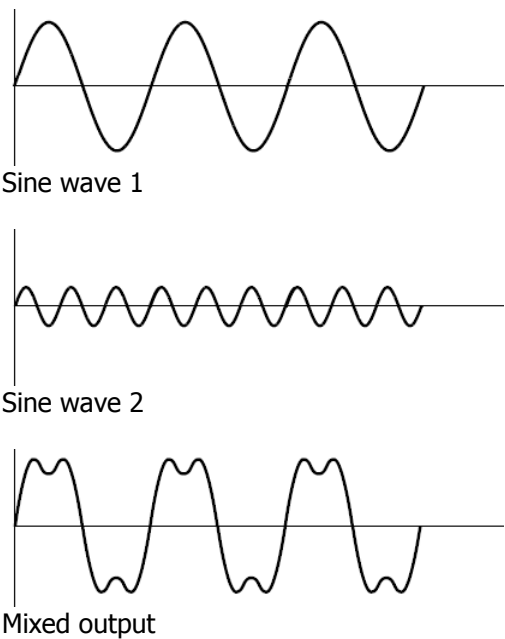
- OSC2 Tune1:**
Controls the pitch of Sine wave 1.
- OSC2 Tune2:**
Controls the pitch of Sine wave 2.

Dual Sine (normal mode):

In normal mode (non-FM) the two Sine waves are simply mixed to one signal while the Shape fader controls the level of Sine wave 2.



Shape in normal Dual Sine mode:
Controls the level of Sine wave 2.



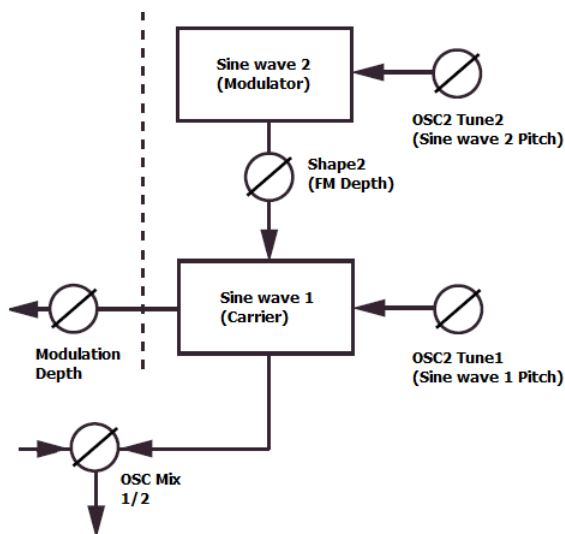
Dual Sine FM:

Instead of the Sync switch (which the other waveforms provide), the Dual Sine waveform provides an FM mode. With Dual Sine FM enabled you have a 2 operator FM engine (as a single Oscillator waveform) with Sine wave 1 as Carrier and Sine wave 2 as Modulator.

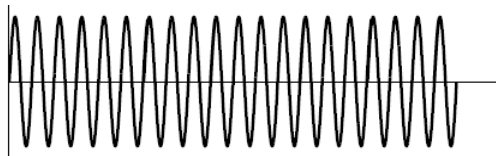


With FM enabled you can choose from 5 different FM algorithms:

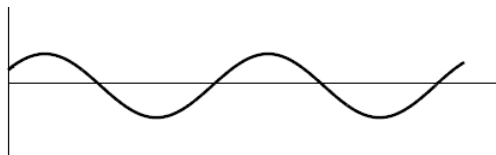
- Phase Modulation (like in DX7)
- Logarithmic +
- Logarithmic +/-
- Linear +
- Linear +/-

**Shape in Dual Sine FM mode:**

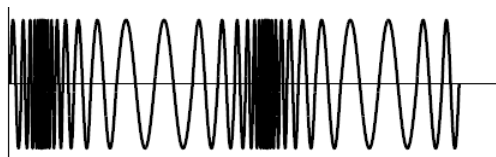
Controls the FM depth/amount.



Sine wave 1



Sine wave 2



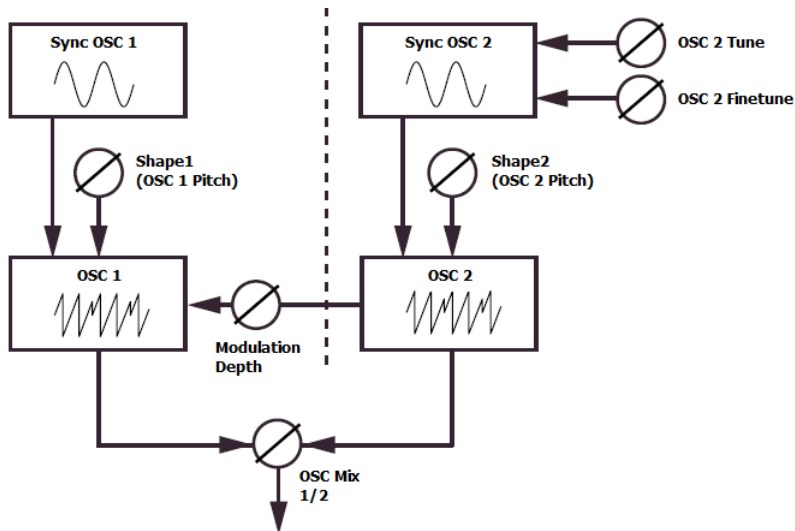
FM output

8.2.4 Oscillator Sync

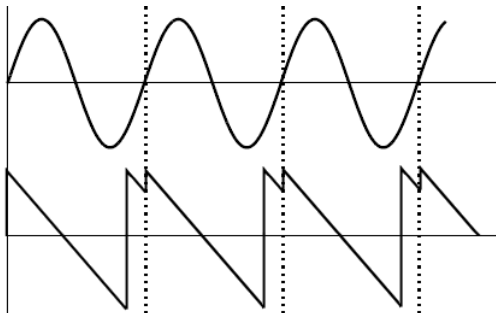


Simply said, Oscillator Synchronization means that you use the signal from one oscillator to restart another oscillator. Oscillator Synchronization also means you only get an output signal from one Oscillator, even though you use two.

Since the VA-Beast provides an extra (hidden) sync Oscillator in each Oscillator unit, you don't need to sacrifice a regular Oscillator just to sync another one. This means you can have 2 synced Oscillators running at the same time.

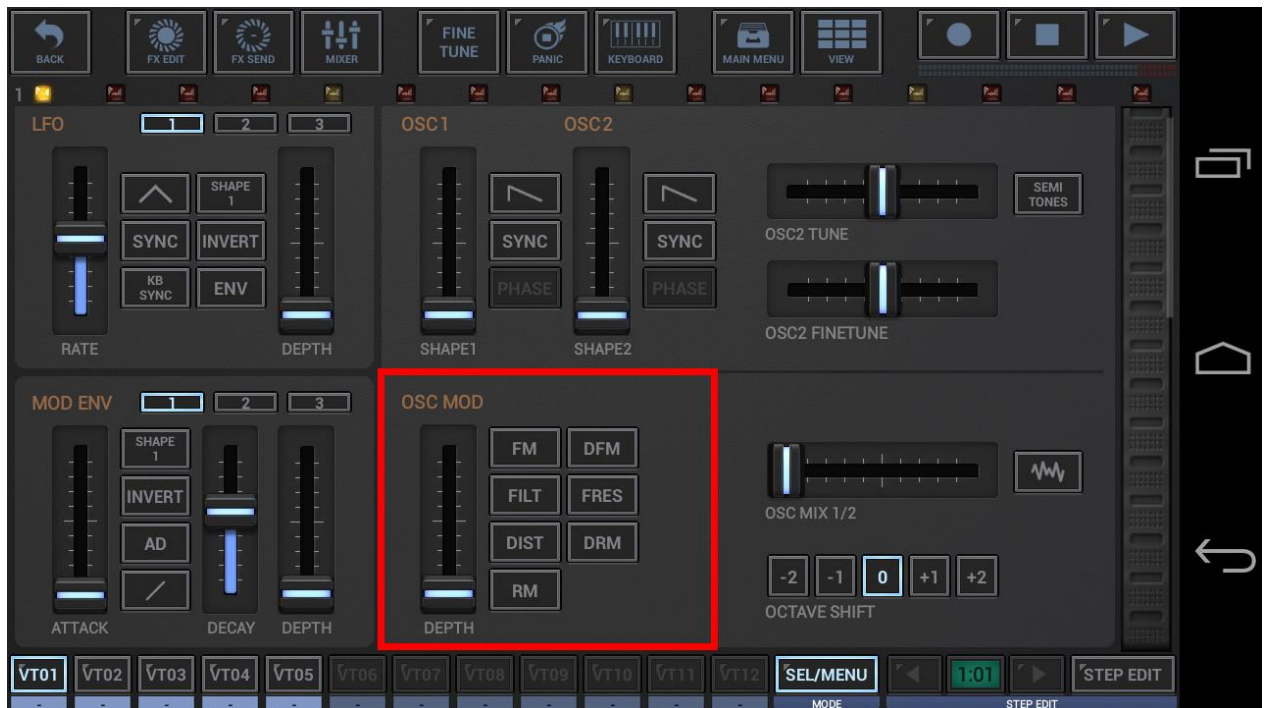


When synchronizing an Oscillator with its Sync Oscillator, the Oscillator cycle gets restarted every time the Sync Oscillator starts with a new cycle.



If the Oscillator runs at a higher frequency than the Sync Oscillator, then it'll result in a new Waveform which depends on both, on its own and in the Sync Oscillator pitch.

8.2.5 Oscillator Modulation



The VA-Beast offers 7 different Oscillator Modulation types.

To choose one of the Modulation modes, simply tap selector buttons.



Use the 'Depth' fader to change the depth/amount of the selected Modulation mode.



8.2.5.1 FM/DFM



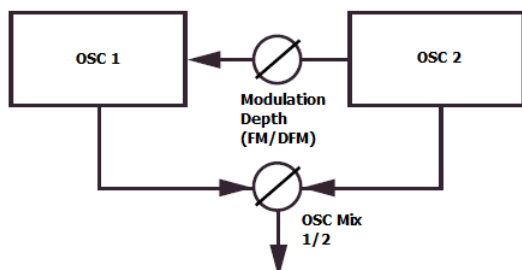
FM/DFM: Frequency Modulation / Differential Frequency Modulation

The VA-Beast Oscillator section supports two main types of Frequency Modulation.

In **FM** mode the modulation depth is fully under control of the depth parameter. FM is the rawer and more aggressive mode.

In **DFM** mode the modulation depth stands in direct relation to the played note, which makes it more “controllable”. In other words it is easier to create perfectly tonal playable sounds (over the complete frequency spectrum).

Notice that the OSC Mix is fully set to OSC1 (see screen shot), which means OSC2 is not directly audible (it’s only used to modulate OSC1).



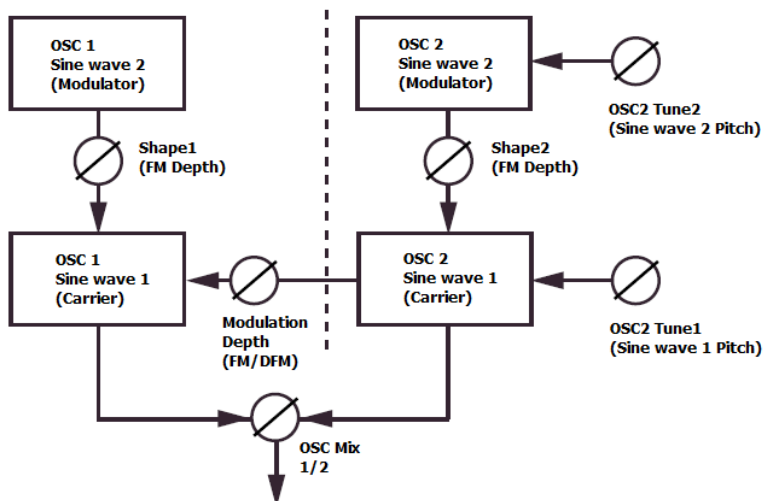
Depth:

Controls the depth/amount of the Frequency Modulation (OSC2 > OSC1).

Note: A good practice is to modulate the OSC MOD Depth with one of the Modulation Envelopes as shown in the screen shot above.



By running both Oscillators in Dual Sine FM mode while using FM/DFM, you can create a 4 Operator FM Engine, which makes it very easy to create complex FM sounds.



Depth:

Controls the depth/amount of the Frequency Modulation (OSC2 > OSC1).



Note:

As soon as an OSC gets frequency modulated (either when FM/DFM is enabled in the OSC MOD section or when using Dual Sine Waveforms), the FM algorithm switch of the particular OSC will be activated.

You can choose from 5 different FM algorithms:

Phase Modulation (like in DX7)
 Logarithmic +
 Logarithmic +/-
 Linear +
 Linear +/-

8.2.5.2 FILT

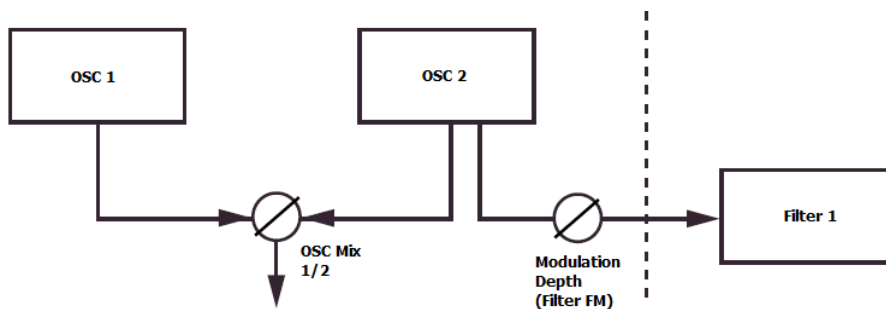


FILT: Filter Frequency Modulation, or short Filter FM

In Filter FM mode the Oscillator 2 modulates the Filter 1 Cutoff frequency.

Notice that the OSC Mix is fully set to OSC1, which means OSC2 is not directly audible (it's only used to modulate the Filter 1 Cutoff).

As a matter of course, Filter FM has only effect, if a Filter is applied (see screen shot).



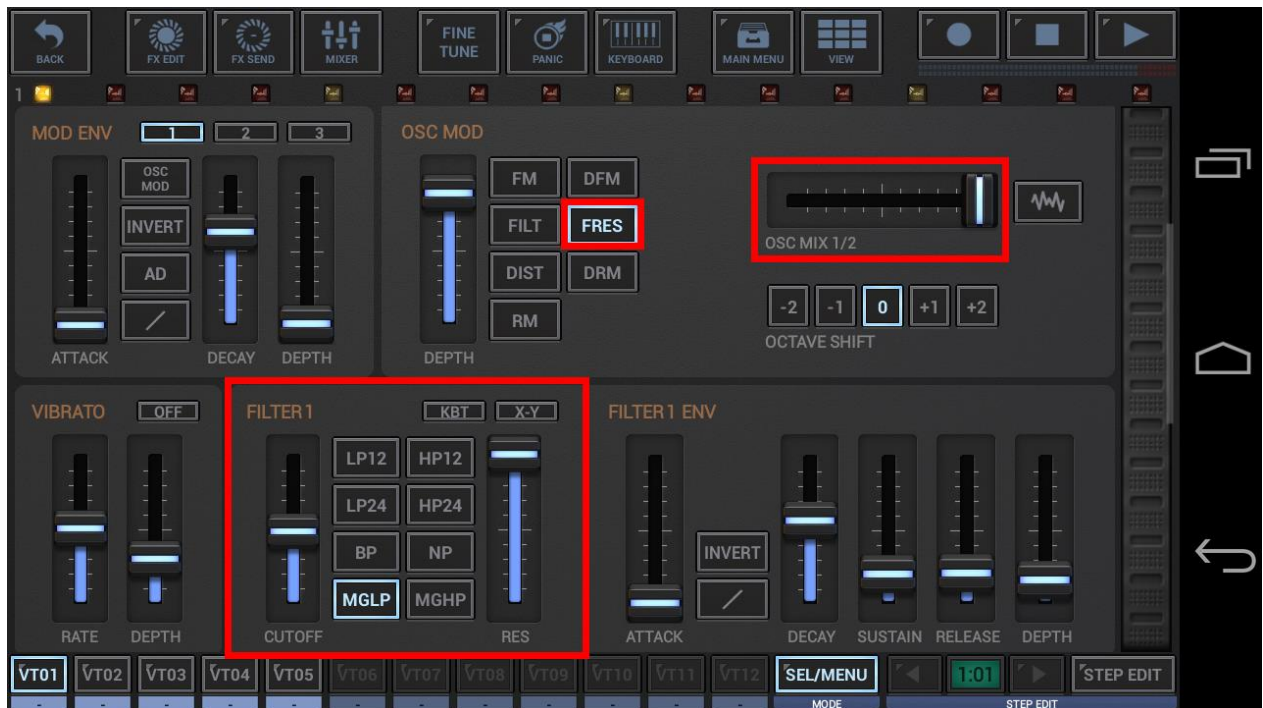
For best results, use high Filter Resonance values.

Depth:

Controls the depth/amount of the Filter 1 Frequency Modulation (OSC2 > Filter 1 Cutoff frequency).

Note: A good practice is to modulate the OSC MOD Depth with one of the Modulation Envelopes as shown in the screen shot above.

8.2.5.3 FRES

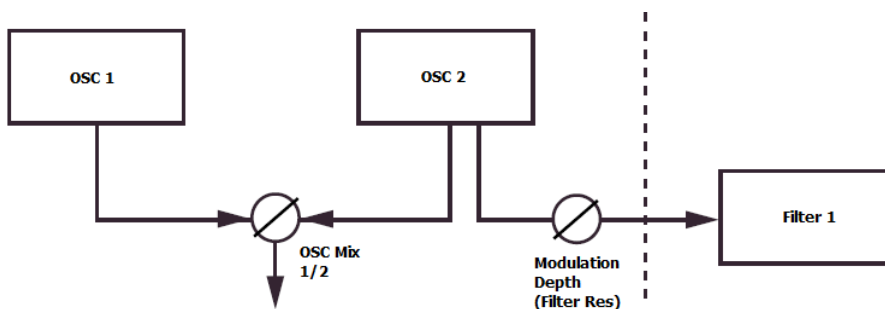


FRES: Filter Resonance Modulation

In this mode the Oscillator 2 modulates the Filter 1 Resonance.

Notice that the OSC Mix is fully set to OSC2, which means OSC2 is fully audible but also used to modulate the Resonance of Filter 1. This wiring (which is similar to the internal filter setup of the Roland TB-303) allows very high and well controllable resonant peaks.

As a matter of course, Filter Resonance Modulation has only effect, if a Filter is applied (see screen shot).



For best results, use Filter Resonance values between 50 and 100 and high OSC MOD values.

Depth:

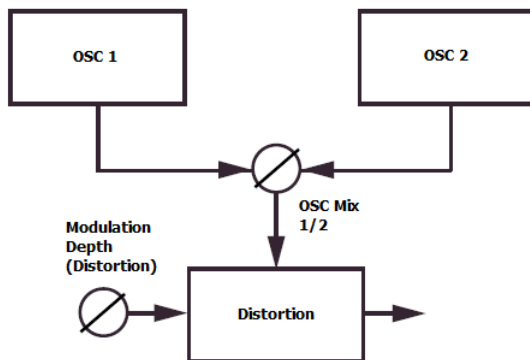
Controls the depth/amount of the Filter 1 Resonance Modulation (OSC2 > Filter 1 Resonance).

8.2.5.4 DIST



DIST: Distortion

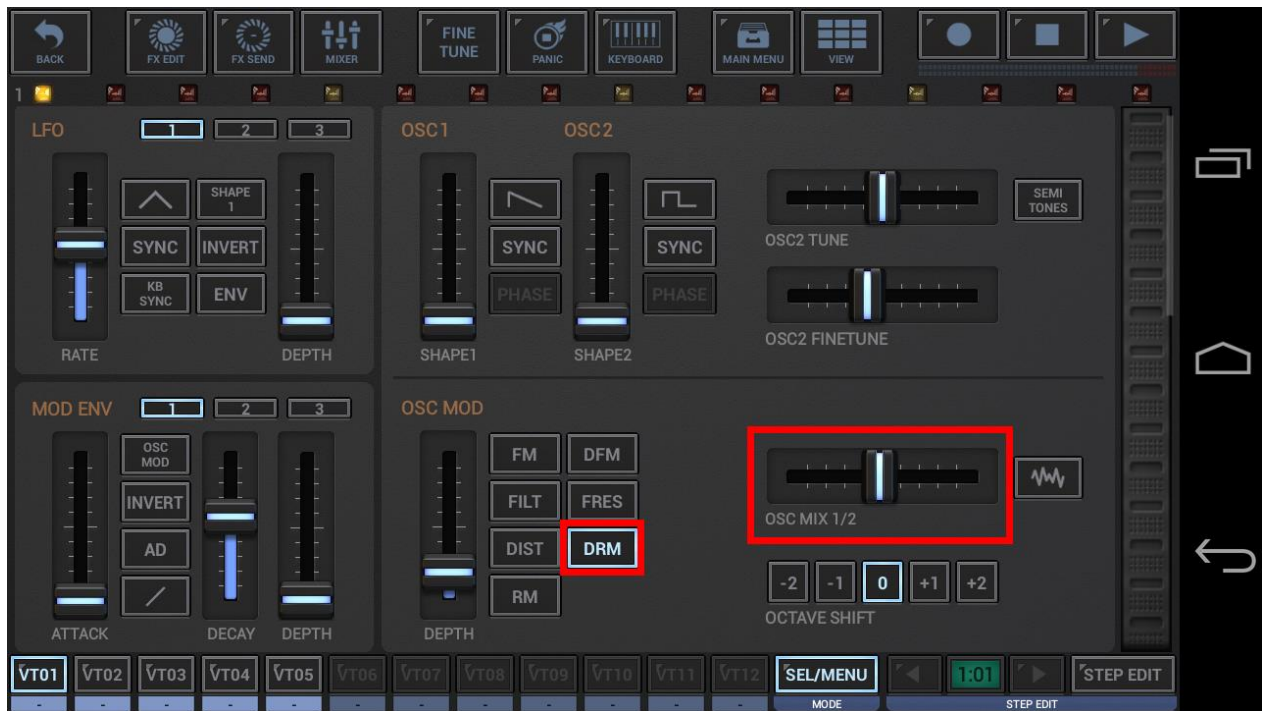
In Distortion mode the mixed signal of Oscillator 1 & 2 is routed through a Distortion processor.



Depth:

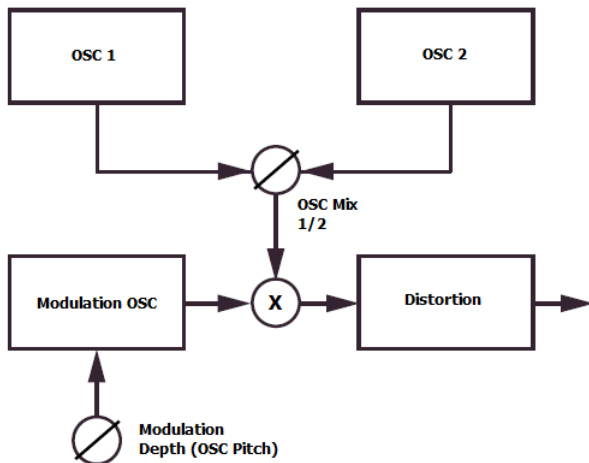
Controls the amount of the Distortion effect

8.2.5.5 DRM



DRM: Distortion Ring Modulation

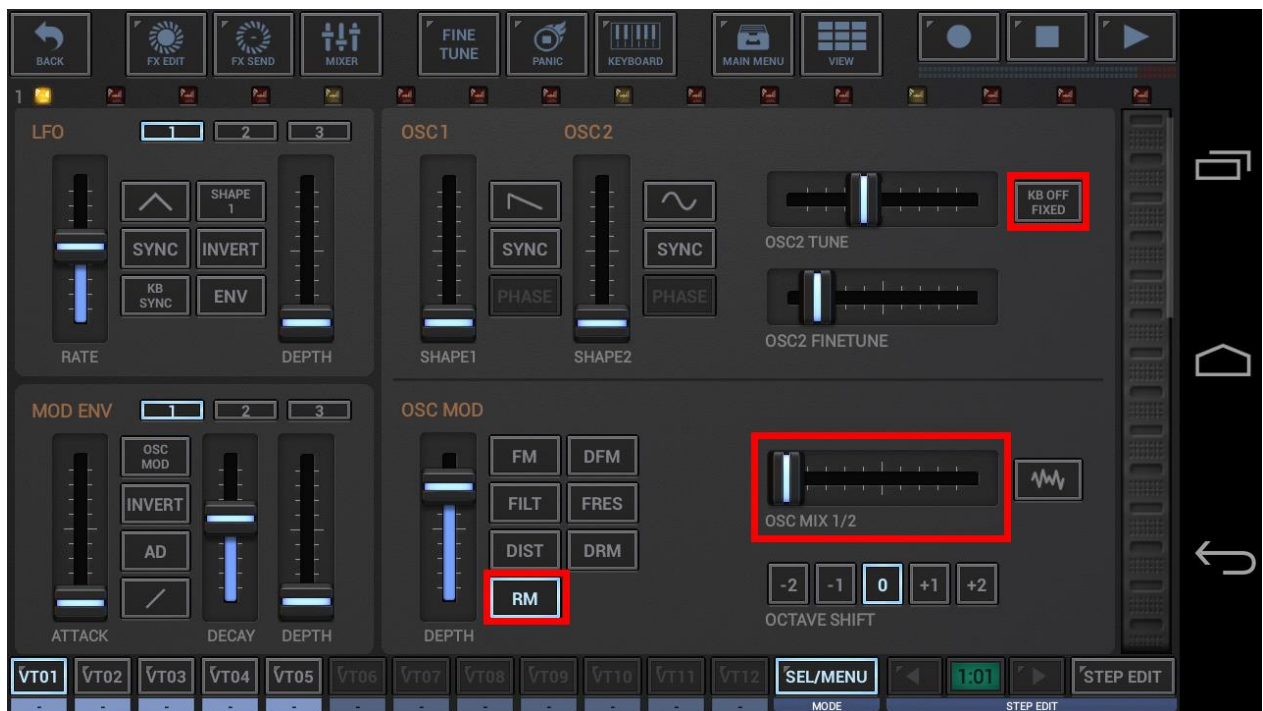
In DRM mode the mixed signal of Oscillator 1 & 2 is Amplitude/Ring modulated, or in other words multiplied with the signal of a third hidden Modulation Oscillator and finally routed through a Distortion Processor.



Depth:

Controls the Pitch of the Modulation Oscillator from -63..+63 semitones.

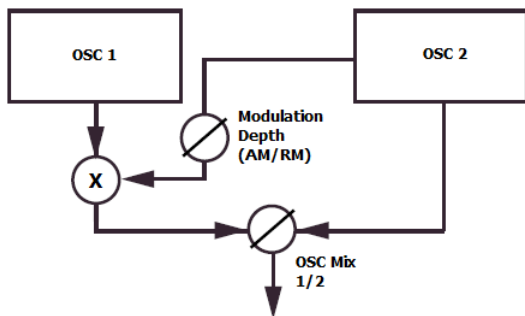
8.2.5.6 RM



RM: Ring Modulation

In RM mode the signal of Oscillator 1 is Amplitude/Ring modulated, or in other words multiplied with the signal of a Oscillator 2.

Notice that the OSC Mix is fully set to OSC1 (see screen shot), which means OSC2 is not directly audible (it's only used to modulate OSC1).



Depth:

Controls the depth/amount of the Amplitude/Ring Modulation ($OSC2 > OSC1$). With values below 50 you get Amplitude Modulation and with values above 50 you get Ring Modulation (in fact it's a smooth transition between AM and RM).

Note:

The main difference between Amplitude Modulation and Ring Modulation that in case of Amplitude Modulation the modulator signal (in our case OSC2) is unipolar (0..1), while in Ring Modulation the modulator signal is bipolar (-1..+1).

8.2.6 Oscillator Mixer



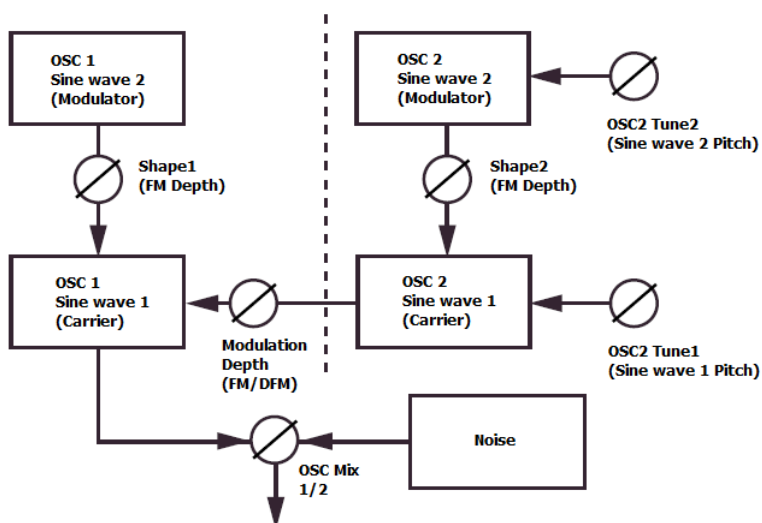
The Oscillator Mixer is used to set the mix level for the Oscillators 1 & 2.

Mixer Noise:

With the Noise switch you can replace the audible output of Oscillator 2 by white Noise.



Notice that even if Noise is enabled, the output signal of Oscillator 2 is still enabled and internally used for Modulation (see Chapter: Oscillator Modulation).



Combine the Mixer Noise with a Modulation Envelope attached to the Oscillator Mixer to add some breath to the beginning of a Sound.

8.2.7 Octave Shift

The Octave Shift switch is used to roughly tune a particular Sound 1 or 2 Octaves up or down.



-2: Transpose 2 Octaves down

-1: Transpose 2 Octave down

0: No transposing

+1: Transpose 2 Octave up

+2: Transpose 2 Octaves up

8.2.8 LFO 1 - 3

The VA-Beast synthesizer provides 3 LFOs (Low Frequency Oscillators) per voice (and track).

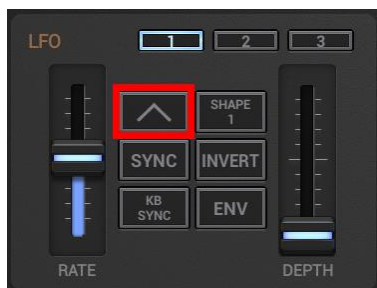


8.2.8.1 Waveform

Each LFO offers 6 different waveforms:

- **Triangle**
- **Sawtooth**
- **Pulse** (Square wave, fixed at 50% pulse width)
- **Random** (similar to Pulse, but with randomized amplitude)
- **Smooth Random** (similar to Triangle, but with randomized amplitude)
- **Triple Peak** (a combination a smooth Sawtooth approximated Sine and a 3 times faster running Sine wave)

To choose one of the waveforms, simply tap the waveform selector button.



8.2.8.2 Destination (assign to Parameter)

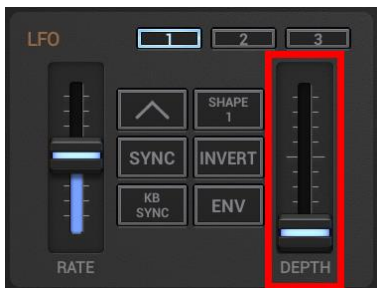
For each LFO you can choose 1 of 12 different parameter routings.



To choose one of the parameters, simply tap the parameter selector button.



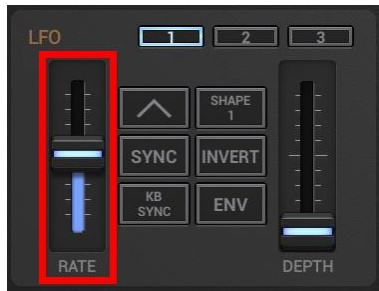
8.2.8.3 Depth



Depth:

Controls the modulation depth/amount of the assigned parameter.

8.2.8.4 Rate (Tempo)



Rate (Sync off):

Controls the LFO Rate in Hz in a range from 100s to 262Hz

Rate (Sync on):

Controls the LFO Rate in Partial

16/1, 8/1, 4/1, 2/1, 1/1, 3/4, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 1/12, 1/16, 1/32, 1/64

8.2.8.5 Tempo Sync



Sync off:

The LFO rate is independent.

Sync on:

The LFO is synchronized with the tempo.

Note:

Depending on the Sync switch, the LFO Rate is set in Hz or in Partial (see Chapter: Rate (Tempo)).

8.2.8.6 Keyboard Sync



KB Sync off:

Within the current Sound (or Track), the LFOs of each voice are synchronized. In other words, if you play a chord, but you hit the keys one after another with some time in between, then the LFOs of all voices of the chord will be synchronized to the first pressed key.

KB Sync off and Mono:

If KB Sync is off, normally the first pressed key (or played note) starts/re-triggers the LFOs.

If the Synths Mono switch is on (see Chapter: Glide / Legato) and KB Sync is off, then the LFOs are not restarted when the first Note is played.

In that special case (KB Sync off, Mono on) the LFOs run in the background without getting re-triggered. This is very useful for 303 style Loops, when you have a slow LFO (attached to the Filter Cutoff for example) while the sequence (which usually contains gaps without notes) is running.

KB Sync on:

The LFOs are independent for each voice.

Each played Note has its own LFO cycle, which is started/re-triggered when the Note starts to play.

In other words, if you play a chord, but you hit the keys one after another with some time in between, then the LFOs of the different voices will not be in sync with each other.

Note:

The Single Cycle (Envelope) mode requires the KB Sync to be enabled. Turning KB Sync off automatically turns the Single Cycle (Envelope) mode off as well, if enabled (see Chapter: Single Cycle (Envelope) Mode).

8.2.8.7 Single Cycle (Envelope) Mode



Env off:

Normal LFO mode (the LFO cycles over and over).

Env on:

The LFO runs in Single Cycle (Envelope) mode. The LFO gets triggered when Note starts to play, then runs once to its end and then stays at that position.

Note:

The Single Cycle (Envelope) mode requires the KB Sync to be enabled. Turning Env on automatically turns the KB Sync on as well, if disabled (see Chapter: Keyboard Sync).

8.2.8.8 Invert

**Invert off:**

Normal LFO mode.

Invert on:

The amplitude of the LFO is inverted (turned upside down).

8.2.9 Modulation Envelope 1 - 3

The VA-Beast synthesizer provides 3 Modulation Envelopes per voice (and track).



8.2.9.1 Envelope Type

Each Modulation Envelope offers 3 different Envelope Types:

- **AD** (Attack, Decay)
When a Note/Key is pressed, it runs through the Attack and Decay phase.
- **AHR** (Attack, Hold, Release)
When a Note/Key is pressed, it runs through the Attack phase, then stays at max position until the Note/Key is released, and then runs through the Release phase.
- **AD Repeat** (Repeating Attack, Decay)
With this type you can use an envelope like an LFO, but with different waveform characteristics. The AD Repeat type repeats the Attack, Decay cycle over and over.

To choose the Envelope Type, simply tap the Envelope Type selector button.

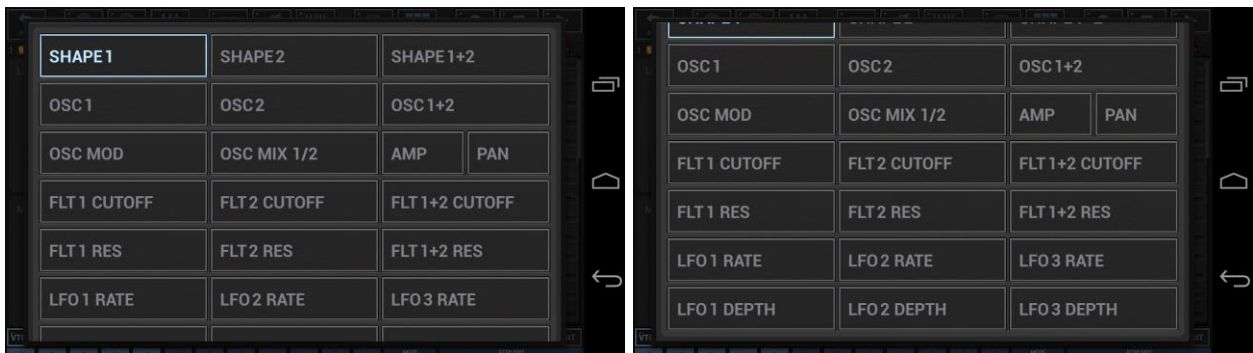


8.2.9.2 Destination (assign to Parameter)

For each Modulation Envelope you can choose 1 of 18 different parameter routings.



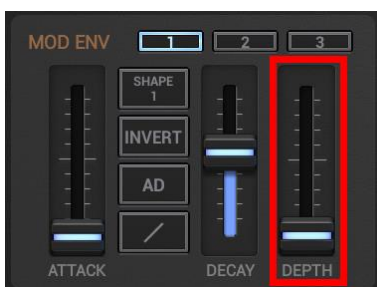
To choose one of the parameters, simply tap the parameter selector button.



Note:

A very powerful function of the VA-Beast is the fact, that the Modulation Envelopes can control the Rate and Depth of the 3 LFOs (see Chapter: LFO 1 – 3). This allows very complex and asynchronous modulation curves.

8.2.9.3 Depth



Depth:

Controls the modulation depth/amount of the assigned parameter.

8.2.9.4 Attack

For each Modulation Envelope you can choose 1 of 3 different Attack Types

- Linear
- Logarithmic
- Offset (this simply delays the Attack and then raises it in zero time to the max position)
Offset is very useful to create Clap sounds for example, which require multiple hard Attack peaks.

Note: Decay and Release are fixed as logarithmic transitions.

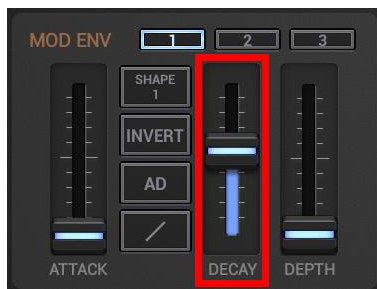
To choose the Attack Type, simply tap the Attack Type selector button.



Attack:

Controls the Attack time in a range from 0.0ms to 20s.
(the time from pressing a key until the envelope reaches its max level)

8.2.9.5 Decay/Release



Decay and AD, AD Repeat Envelope Type:

Controls the Decay time in a range from 0.5ms to 20s.
(the time from the moment the attack is finished until the envelope reaches the zero level)

Decay and AHD Envelope Type:

Controls the Release time in a range from 0.5ms to 20s.
(the time from releasing a key until the envelope reaches the zero level)

8.2.9.6 Invert

**Invert off:**

Normal Envelope mode.

Invert on:

The amplitude of the Envelope is inverted (turned upside down).

8.2.10 Filter 1 & 2

The VA-Beast provides two Multi Filters (per voice) with 8 Filter types.



8.2.10.1 Filter Type

Each Filter offers 8 different Filter Types:

- **LP12** (12dB Low Pass Filter)
- **HP12** (12dB High Pass Filter)
- **LP24** (24dB Low Pass Filter)
- **HP24** (24dB High Pass Filter)
- **BP** (12dB Band Pass Filter)
- **NP** (12dB Notch/No Pass Filter)
- **MGLP** (24dB Moog Low Pass Filter)
- **MGHP** (24dB Moog High Pass Filter)

Cutoff:

Controls the Filter Cutoff Frequency in a range from 1Hz to 14000Hz

Res:

Controls the Filter Resonance

Bandw (BP, NP Filter only):

Controls the Bandwidth

8.2.10.2 Filter Keyboard Tracking



Keyboard Tracking off:

The Cutoff frequency is constant independent which Note you currently play, in other words it is under exclusive control of the Cutoff fader.

Keyboard Tracking on:

The Cutoff frequency is controlled by the Cutoff fader, but also by the played Note. When playing higher Notes, the Cutoff frequency will be higher, when playing lower Notes, the Cutoff frequency will be lower. The Base Note for the frequency calculation is C2, at this Note the Cutoff frequency is the same with and without KBT).

8.2.11 Filter 2



Filter 2 is basically the same as Filter 1.

But in addition it offers a switch to change the internal routing of Filter 2 (in relation to Filter 1) between serial and parallel.



8.2.12 Filter 1 & 2 Envelope



The Filter Envelopes are regular ADSR (Attack, Decay, Sustain, Release) Envelopes, which control the particular Filter Cutoff frequency depending on the Depth value.

8.2.12.1 Depth



Depth:

Controls the modulation depth/amount of the Filter Cutoff frequency.

8.2.12.2 Attack

The Filter Envelope provides 3 different Attack Types

- Linear
- Logarithmic
- Offset (this simply delays the Attack and then raises it in zero time to the max position)

Note: Decay and Release are fixed as logarithmic transitions.

To choose the Attack Type, simply tap the Attack Type selector button.



Attack:

Controls the Attack time in a range from 0.0ms to 20s.
(the time from pressing a key until the envelope reaches its max level)

8.2.12.3 Decay



Decay:

Controls the Decay time in a range from 0.5ms to 20s.
(the time from the moment the attack is finished until the envelope reaches the sustain level)

8.2.12.4 Sustain

**Sustain:**

Controls the Sustain level
(the level which is kept as long a key is pressed).

8.2.12.5 Release

**Release:**

Controls the Release time in a range from 0.5ms to 20s
(the time from releasing a key until the envelope reaches the zero level)

8.2.12.6 Invert

**Invert off:**

Normal Envelope mode.

Invert on:

The amplitude of the Envelope is inverted (turned upside down).

8.2.13 Vibrato

Use the Vibrato function to add Vibrato to your sound.



The Vibrato is technically an additional independent LFO with a limited frequency range, which is applied to the Oscillator(s) Pitch.

8.2.13.1 Rate

Controls the Vibrato Rate in a range from 4Hz to 8Hz



8.2.13.2 Depth

Controls the Vibrato Depth in a range from +/-0cents (no vibrato) to +/-100cents (+/-1 semitone)



8.2.14 Unison (Stereo)



The effect of unison is simply to multiply the signal which is being produced by the synthesizer and to detune each signal against each other (just like detuning oscillators). This creates a much bigger sound, especially by additionally panning the signals against each other.

Using the Unison with sawtooth waveforms lets you easily create the typical "Supersaw" sound known from Roland Synthesizers (also known as "Hypersaw" from the Access Virus TI-line). To make this effect even more significant, combine the Unison with the Chord Memory Feature (see Chapter: Chord Memory).

When you create a memorized chord with 4 voices (C2, C3, C4 and C5), and apply Unison at level 5x to the sound, then each piano key plays actually $4 \times 5 = 20$ voices, each detuned and panned against each other. The result sounds huge and has massive stereo-wide effect. The only downside of such a setup is the fact that it requires quite a lot of CPU power. It's actually nothing less than playing 20 voices at once.

Important Note - Unison eats CPU power:

A true Unison like the one built into the VA-Beast Synthesizer is a CPU intensive effect. Since the Unison (if enabled) creates multiple detuned signals, the creation of each signal uses its own CPU time. This means in numbers: If you use the 5x setting, then the creation of the sound requires around 4 times more CPU power than the same sound without Unison enabled.

8.2.14.1 Signal Multiplication (Voice Count)

The VA-Beast Unison offers 3 different signal multiplication levels:

- **2x** (pans 1 signal slightly to the left of the stereo field, and 1 to the right)
- **3x** (pans 1 signal fully to the left of the stereo field, 1 to the right, and keeps 1 in the center)
- **5x** (pans 2 signals fully to the left of the stereo field, 2 to the right, and keeps 1 in the center)

In Each level, all multiplied signals are detuned against each other to create a massive stereo-wide effect.

Each multiplication level has its own characteristics. A higher level does not automatically mean you get a better sounding result. Which level is the best for a particular sound, depends on many factors (waveforms, filters, modulations, etc.). Higher values are usually ideal for lead sounds while lower values fit very well for bass sounds. But at the end it mostly depends on your personal taste.



8.2.14.2 Depth

Controls the depth of the Unison effect, in fact the detune amount of each signal.



8.2.15 Glide (Portamento) / Legato

G-Stomper VA-Beast comes with a powerful and easy to use Glide/Legato feature which is operating monophonic as well as polyphonic (to morph complete chords for example).



The Glide / Legato section offers 3 main operation modes:

- **Off:** Glide and Legato OFF
No gliding is applied. Every key press triggers the envelopes.
- **On:** Glide ON (depending on the Rate value), Legato OFF

If you play a new key, the previous Note (even if the key is released already) will glide to the new Note. The Envelopes get triggered normally.

If you play a new chord, the previous Notes (even if the keys are released already) will glide parallel to the new Notes. The Envelopes get triggered normally.

- **Auto Legato:** Glide ON (depending on the Rate value), Legato ON

If you play a new key before releasing the previous played key (legato), the previous note will glide to the new Note at the set Glide Rate without re-triggering the Envelopes.

If you play a new key and no previous key is pressed, no gliding is applied and the Envelopes get triggered normally (like in OFF operation).

If you play a new chord before releasing the previous played chord (legato), the previous Notes will glide parallel to the new Notes at the set Glide Rate without re-triggering the Envelopes.

If you play a new chord and no previous chord is pressed, no gliding is applied and the Envelopes get triggered normally (like in OFF operation).

Note: If you want Legato without Glide applied, set the Rate to 4096 semitones/sec (see Chapter: Glide Rate)

To choose one of the operation modes, simply tap the selector button.



8.2.15.1 Rate

The glide rate defines the tempo in semitones per second to glide from one note to another. The gliding tempo is constant, which means as longer the distance between two Notes, as longer takes the glide.



Rate:

Controls the Glide Rate in a range from 4096 semitones/sec to 1.12 semitones/sec.

8.2.15.2 Monophonic Operation

In mono mode you can only play one note at a time, like on a classic monophonic synthesizer.

If you play one key (and hold it) and then a second key without releasing the first one, the second note will sound. If you now release the second key (while still holding the first one), the first one will retrigger and start sounding again.

Note:

You can combine the monophonic operation with the all Glide/Legato operation modes, Off, On and Auto Legato. To simulate a typical 303 behavior for example, enable Mono and Auto Legato.



Mono off:

Normal polyphonic mode

Mono on:

Monophonic operation mode

8.2.16 Chord Memory

The Chord Memory feature of the VA-Beast allows you to map complete chords to single keys. Once a chord is memorized, it will be transposed with every key you play.



Chords can be memorized/recorded in 3 main ways:

- Chord Memory Standard Mode (without using any KB hold switch)
- Chord Memory with KB Hold (the one in the ChordMem section)
- Chord Memory Standard Mode with audible KB Hold (the one on the Panic button)

(see next Chapters for detailed descriptions)

8.2.16.1 Chord Memory Standard Mode (without using any KB hold switch)

1. Press the Chord Rec Button once to enable the recording mode.
2. Press some Chord on the Piano Keys.
3. While holding the Chord, press the Chord Rec Button again to save the chord

In standard mode, the saved chord starts always with the lowest note.

In other words, when you check the tool tip above the Chord Rec Button, you can see the chord notes as a comma separated list of numbers, which always starts with a 0(zero), independent which note you pressed first (e.g. 0,3,5).

For many cases this is the expected behavior and it's the most simple way to save a chord, since you can hear the chord directly while you record it.

Note:

When you finish a Chord Recording (either by pressing the Chord Rec Button the second time or by reaching the max Chord size), the memorized Chord gets enabled automatically and you can start playing with it straight away. The max Chord size depends on the "Number of Synthesizer Voices" setting in the Setup dialog (2 up to 10 voices).

8.2.16.2 Chord Memory with KB Hold (the one in the ChordMem section)

1. Press the Chord Rec Button once to enable the recording mode.
2. Press the KB hold Button (above the Chord Rec Button) to enable the extended mode.
3. Press your chord one by one (each key separately).
Every key gets added to the chord.
4. Press the Chord Rec Button again to save the chord

In the KB hold mode you don't have to hold the chord, and sometimes it's easier to record it that way (pressing each key one by one).

But there is an another big difference to the standard mode: Try to press first a note, then press an another one below the first note. Now you can see in the tool tip, that the list is no longer starting with a 0(zero), e.g. -15,-12,0,3,5.

In other words, the master key of the chord is not the lowest key, it's always the key that you pressed first. This is very useful if you want to create chord with a range over multiple octaves, and you want the base key not at the lowest position.

Of course the same chords can be achieved using the standard mode in combination with the audible KB Hold function (the one on the panic button, see next Chapter), but then you always have to start with the lowest key, which is not always the most intuitive way.

Note:

When you finish a Chord Recording (either by pressing the Chord Rec Button the second time or by reaching the max Chord size), the memorized Chord gets enabled automatically and you can start playing with it straight away. The max Chord size depends on the "Number of Synthesizer Voices" setting in the Setup dialog (2 up to 10 voices).

8.2.16.3 Chord Memory Standard Mode with audible KB Hold (the one on the Panic button)

1. Long press the Panic button in the toolbar on top of the screen to enable the main KB Hold.
2. Press the Chord Rec Button once to enable the recording mode.
3. Then press your chord one by one (each key separately).
Every key gets hold, and so added to the chord.
4. Press the Chord Rec Button again to save the chord.
5. Finally (short) press the Panic button to stop the playback

As already mentioned above, in this standard mode, the saved chord starts always with the lowest note, e.g. 0,3,5,12,15.

The difference to the standard mode without KB hold is that you can switch the octaves between your key presses.

This way is very useful if you want to hear the chord while saving it and you want the chord to spread over multiple octaves.

Note:

When you finish a Chord Recording (either by pressing the Chord Rec Button the second time or by reaching the max Chord size), the memorized Chord gets enabled automatically and you can start playing with it straight away. The max Chord size depends on the "Number of Synthesizer Voices" setting in the Setup dialog (2 up to 10 voices).

8.2.17 Arpeggio

The VA-Beast provides a simple but powerful Arpeggiator.



8.2.17.1 Operation Pattern

The Arpeggio offers 4 basic operation patterns:

- **Up** (plays the active notes in ascending order)
- **Down** (plays the active notes in descending order)
- **Up/Down** (plays the active notes first in ascending, then in descending order and then starts over)
- **Random** (plays the active notes randomly)

To choose one of the patterns, simply tap the pattern selector button.



Note:

All operation patterns can be used in a range of 1 - 4 Octaves (see Chapter: Octave Range).

8.2.17.2 Octave Range

Use the Octave range selector to set the Octave range for the Arpeggio (1 - 4 Octaves).



8.2.17.3 Rate (Tempo)



Rate (Sync off):

Controls the Arpeggio Rate in Hz in a range from 1.0Hz to 60.0Hz

Rate (Sync on):

Controls the Arpeggio Rate in Partials

1/1, 3/4, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 1/12, 1/16, 1/32, 1/64

8.2.17.4 Tempo Sync



Sync off:

The Arpeggio rate is independent.

Sync on:

The Arpeggio is synchronized with the tempo.

Note:

Depending on the Sync switch, the Arpeggio Rate is set in Hz or in Partials (see Chapter: Rate (Tempo)).

8.2.18

8.2.19 Amplifier Envelope / Output Level



The Amplifier Envelope is a regular ADSR (Attack, Decay, Sustain, Release) Envelope, which controls the Output Level of a Sound, or in other words its basic shape.

The Amplifier Envelope gives the Sound its main characteristic (plucked, stopped, soft, hard, etc.).

8.2.19.1 Attack

The Amplifier Envelope provides 2 different Attack Types

- Linear
- Logarithmic

Note: Decay and Release are fixed as logarithmic transitions.

To choose the Attack Type, simply tap the Attack Type selector button.



Attack:

Controls the Attack time in a range from 0.0ms to 20s.
(the time from pressing a key until the envelope reaches its max level)

8.2.19.2 Decay



Decay:

Controls the Decay time in a range from 0.5ms to 20s.
(the time from the moment the attack is finished until the envelope reaches the sustain level)

8.2.19.3 Sustain



Sustain:

Controls the Sustain level
(the level which is kept as long a key is pressed).

8.2.19.4 Release



Release:

Controls the Release time in a range from 0.5ms to 20s
(the time from releasing a key until the envelope reaches the zero level)

8.2.19.5 Output Level

**Level:**

Controls the main output level of the Sound.

Note:

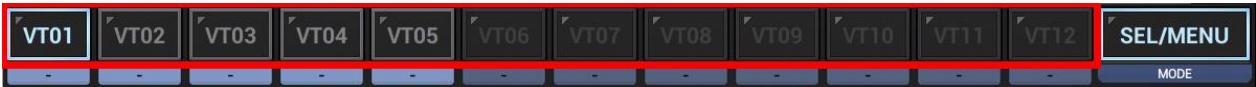
The Output Level is at the very end of the VA-Beast internal audio chain. It defines the level at which the audio signal leaves the Synth before it gets passed to the Mixer.

Note:

Regarding the Amplifier Envelope, the Output Level defines the Envelopes max level.

8.3 VA-Beast Tracks

8.3.1 VA-Beast Track Pads VT01 – VT12 (various screens)

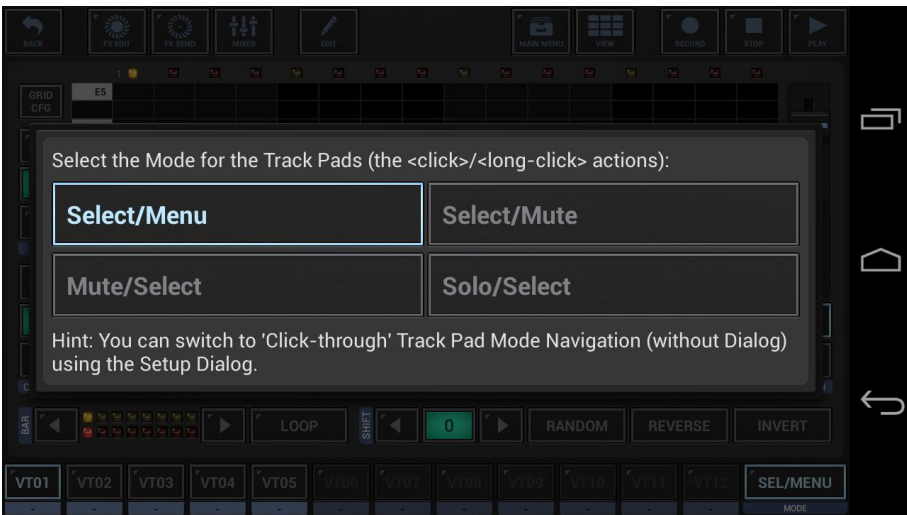


Track Pads (VT[...]) are located on the VA-Beast Synthesizer, VA-Beast Poly Grid and VA-Beast Full Size Piano.

Note: The number of available/enabled Tracks depends on the 'Number of Synthesizer Tracks' setting in the Setup dialog.

8.3.2 VA-Beast Track Pad Mode (various screens)

Depending on the selected Track Pad Mode, the VT[...] Buttons have different actions applied. Tap the Track Pad Mode Button to switch between the different modes.



Each Mode is defined with two terms.
The term before the "/" is the short click action.
The term after the "/" is the long click action.

8.3.3 Actions for Track Pads in the different Modes

The following list describes the actions which are applied to the Track Pads (VT[..]) in the different modes.



Select/Menu:

Click → Select Track
Long Click → Show up the Track Menu

Select/Mute:

Click → Select Track
Long Click → Track Mute ON/OFF

Mute/Select:

Click → Track Mute ON/OFF
Long Click → Select Track

Solo/Select:

Click → Track Solo ON/OFF
Long Click → Select Track

8.3.4 Actions for the Track Pad Mode Button in the different Modes



All Modes:

Click → Select Mode

Select/Menu:

Long Click → Multi-Mute ON/OFF (see Chapter: Programmable Multi-Mute)

Select/Mute:

Long Click → Multi-Mute ON/OFF (see Chapter: Programmable Multi-Mute)

Mute/Select:

Long Click → All Track Mute OFF

Solo/Select:

Long Click → All Track Solo OFF

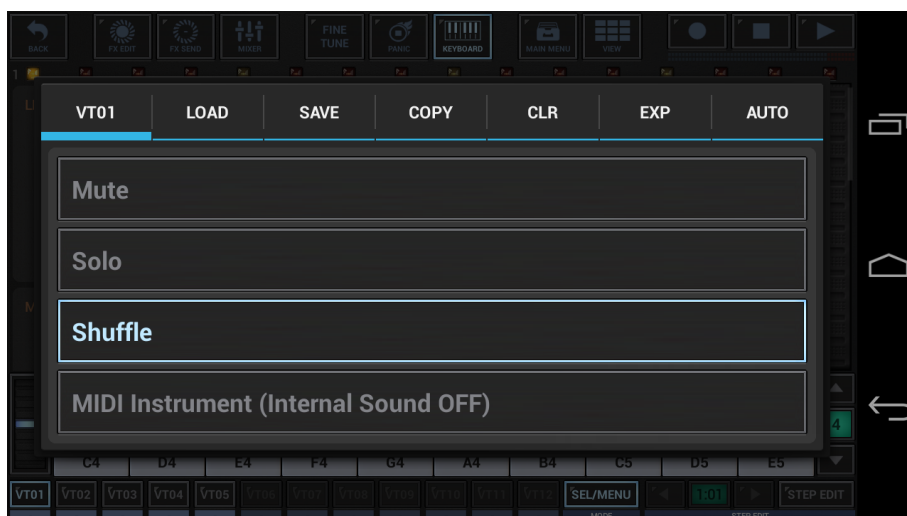
8.4 VA-Beast Track Menu

The VA-Beast Track Menu provides all operations for a particular Synthesizer Track.



Make sure that the Track Pad mode is set to Sel/Menu (which is the default).
Long click a Track Pad to open to the Track Menu.

8.4.1 VT[..]



Mute:

Track Mute ON/OFF

Solo:

Track Solo ON/OFF

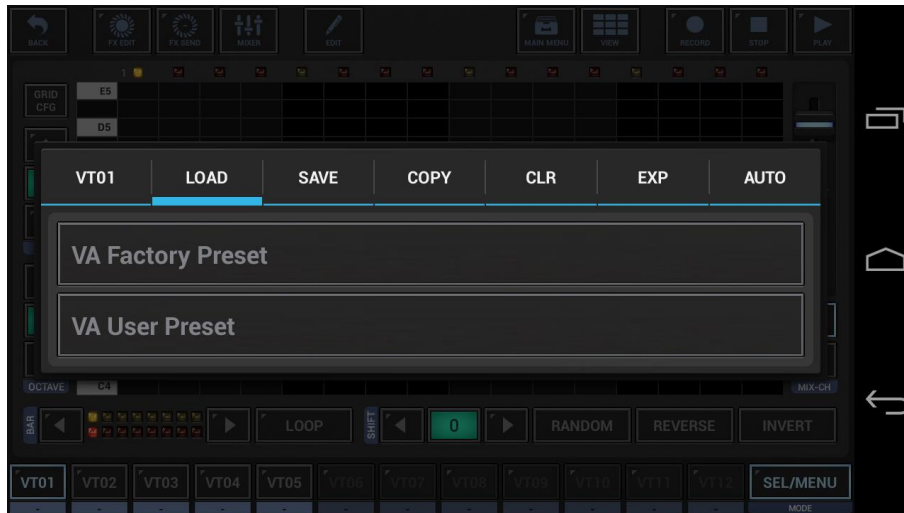
Shuffle:

Track Shuffle/Swing ON/OFF

MIDI Instrument (Internal Sound Off):

Enable this option to control an external MIDI Instrument with this Track, rather than the internal Audio Source. Using a Track as [MIDI Instrument] means, the internal Sound will be disabled and only MIDI events will be fired from the Track. Be sure to configure the MIDI Channels, IN/OUT Interfaces in the G-Stomper Setup before you enable this option.

8.4.2 Load



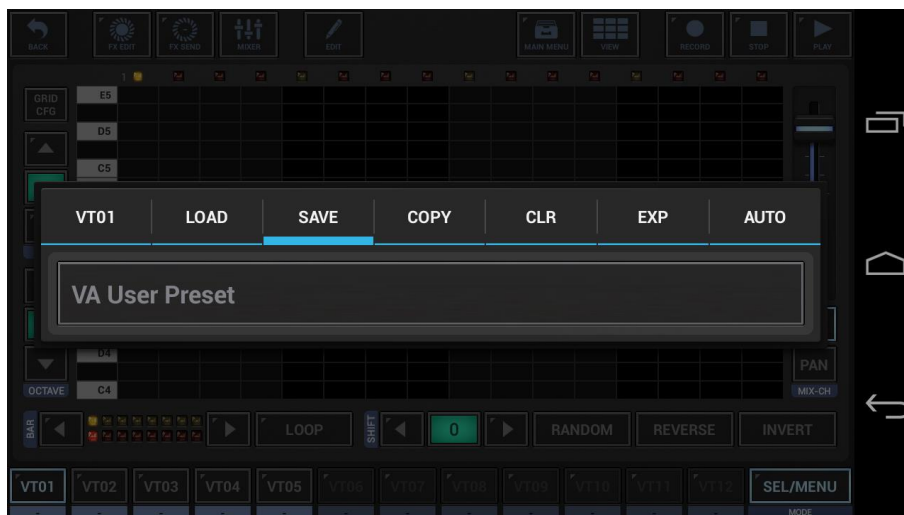
Load VA Factory Preset:

Load a Factory Preset into the VA-Beast instance of the Track
(this includes also Presets from installed Add-On Packs)

Load VA User Preset:

Load a User Preset into the VA-Beast instance of the Track

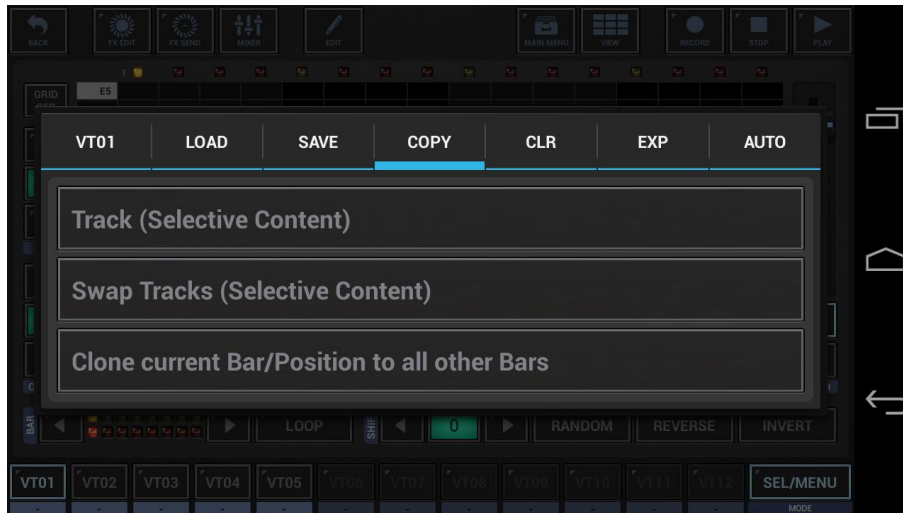
8.4.3 Save



Save VA User Preset:

Save a User Preset from VA-Beast instance of the Track

8.4.4 Copy



Copy Track (Selective Content):

Copy the complete Track or selective Content (multiple choice) to ..
 .. a Track of your choice (in a Pattern of your choice)
 .. to the same Track in all Patterns in the Pattern Set
 .. to the same Track in a selection of Patterns in the Pattern Set
 .. to the same Track in all Patterns in a selection of Pattern Banks (A, B, C, D) in the Pattern Set
 (for details see Chapter: Data Copy & Clear Framework)

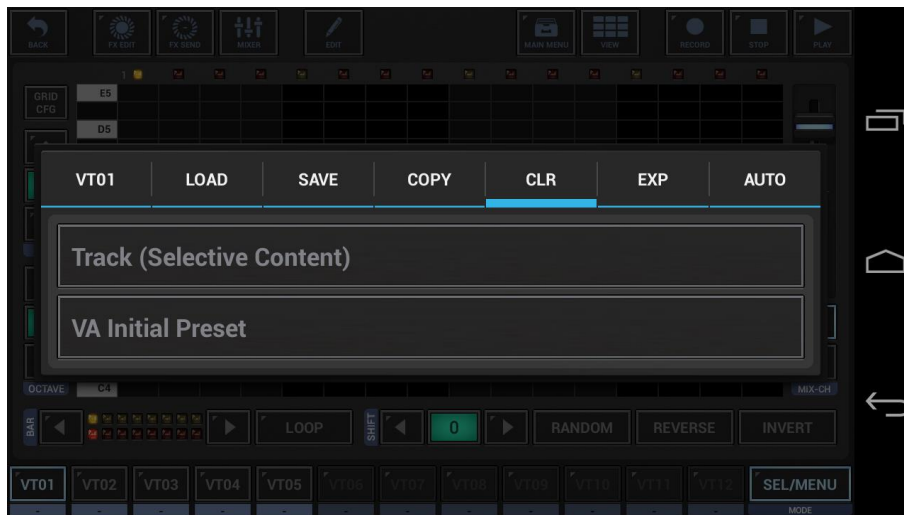
Swap Tracks (Selective Content):

Swap the complete Track or selective Content (multiple choice) with a Track of your choice in a Pattern of your choice
 (for details see Chapter: Data Copy & Clear Framework)

Clone current Bar/Position to all other Bars

Clones the current Bar/Position (of this Track) including Parameter Automations to all other bars in the Pattern.

8.4.5 Clear



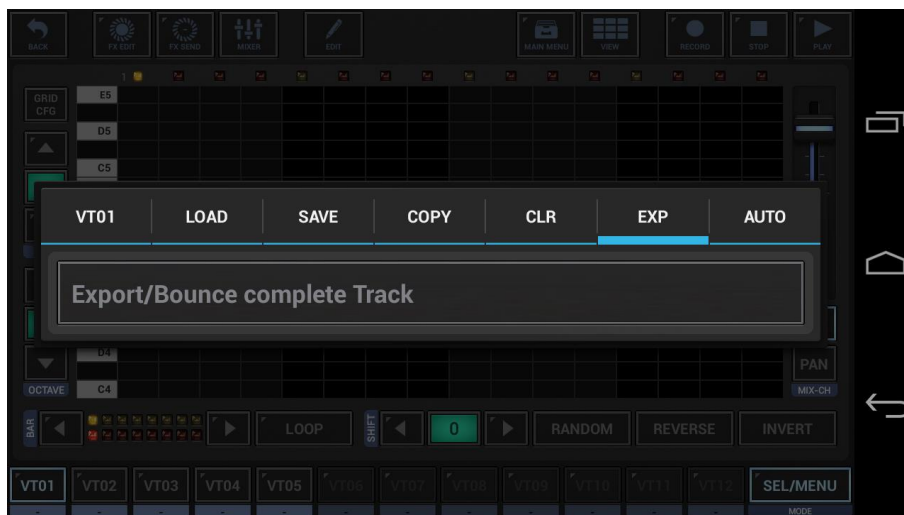
Clear Track (Selective Content):

Clear the complete Track or selective Content (multiple choice)
(for details see Chapter: Data Copy & Clear Framework)

VA Initial Preset:

Initialize the VA-Beast instance of the Track with a pre-defined Initial Preset

8.4.6 Export

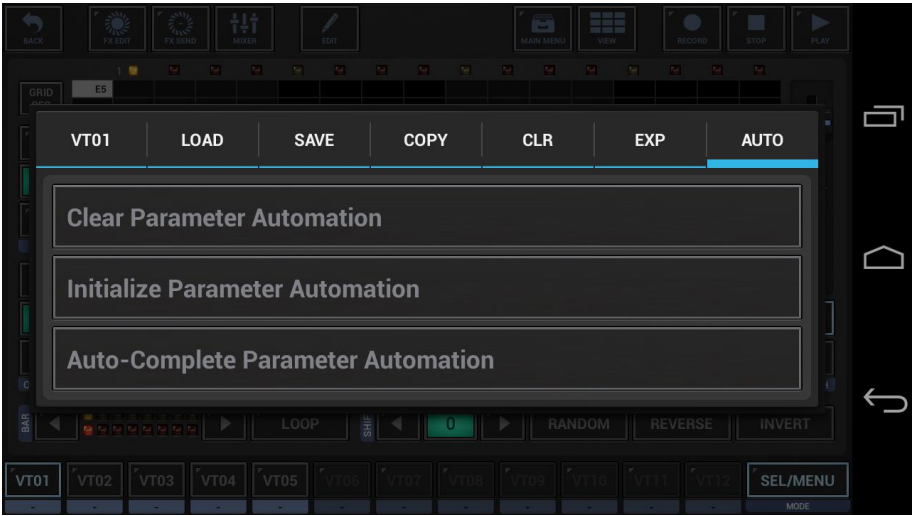


Export/Bounce complete Track:

Export/Bounce the complete Track including the Sequence, all Track and FX Parameters and all Automations. The exported Loop file will be located in the folder /gstomper/usersamples/bounced_tracks and will be loaded automatically at the end of the bounce process.

(for details see Chapter: Audio Export & Bouncing)

8.4.7 Automation



Clear Parameter Automation:
Clear the Automation Steps of a specific Track Parameter. The Parameter can be selected in the following Sub Menu.

Initialize Parameter Automation:
Initialize all Automation Steps of a specific Track Parameter to the current Value. The Parameter can be selected in the following Sub Menu. (On the efx edit and master screen click on the Mod Menu Button)

Auto-Complete Parameter Automation:
The Auto-Complete Parameter Automation feature is used to create smooth movements just by setting the key steps.

To use it, you just have to define at least 2 Automation steps (in use of the Step Edit mode) for the desired parameter. Then call Auto-Complete Parameter Automation and enjoy the magic. The number of key steps is not limited. The Auto-Complete just fills all the gaps between the key steps with a smooth movement.

Note: Keep in Mind, that you must set the start step, even if it gets the same value as the already set parameter value.

(for details see Chapter: Parameter Automation)